

General

Title

Stroke: percentage of SAH patients for whom nimodipine treatment was administered within 24 hours of arrival at the hospital.

Source(s)

The Joint Commission. Disease-specific care certification program. Comprehensive stroke: performance measurement implementation guide. Oakbrook Terrace (IL): The Joint Commission; 2015 Mar. 278 p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of subarachnoid hemorrhage (SAH) patients for whom nimodipine treatment was administered within 24 hours of arrival at the hospital.

Rationale

Cerebral vasospasm is a serious complication following subarachnoid hemorrhage (SAH), occurring in 30% to 70% of patients and accounting for nearly 50% of the deaths in patients surviving to treatment. Constriction of the arterial lumen results in diminished cerebral perfusion distal to the affected artery, which produces a delayed neurological deficit that may progress to cerebral infarction without early management of the ruptured aneurysm. The arterial narrowing that occurs in cerebral vasospasm is typically a transient or temporary event, lasting from a few days up to 3 weeks.

The main goal of current treatment is to prevent or limit the severity of cerebral vasospasm. Only two treatments are generally accepted as proven and valuable for the prevention of ischemic stroke and

reduction of ischemic complications:

Treatment with cerebroselective calcium channel blocker nimodipine-Nimotop (60mg po q4h for 21 days after hemorrhage or after hospital discharge if discharged within 21 days); Aggressive hypervolemic, hypertensive, hemodilution therapy (i.e., triple-H therapy) with pressor agents and volume expansion (colloids) while monitoring the central venous pressure (CVP) or pulmonary capillary wedge pressure (PCWP), following early clipping of the aneurysm.

Evidence for Rationale

Adams HP, del Zoppo G, Alberts MJ, Bhatt DL, Brass L, Furlan A, Grubb RL, Higashida RT, Jauch EC, Kidwell C, Lyden PD, Morgenstern LB, Qureshi AI, Rosenwasser RH, Scott PA, Wijdicks EF, American Heart Association, American Stroke Association Stroke Council, Clinical Cardiology Council, Cardiovascular Radiology and Intervention Council, Atherosclerotic Peripheral Vascular Disease and Quality of Care Outcomes in Research Interd[TRUNC]. Guidelines for the early management of adults with ischemic stroke: a guideline from the American Heart Association/American Stroke Association Stroke Council, Clinical Cardiology Council, Cardiovascular Radiology and Intervention Council, and the Atherosclerotic Peripheral Vascular Disease and Quality of Care Outcomes in Research Interdisciplinary Working Groups: the American Academy of Neurology affirms the value of this guideline as an educational tool for neurologists. *Stroke*. 2007 May;38(5):1655-711. [PubMed](#)

Allen GS, Ahn HS, Preziosi TJ, Battye R, Boone SC, Boone SC, Chou SN, Kelly DL, Weir BK, Crabbe RA, Lavik PJ, Rosenbloom SB, Dorsey FC, Ingram CR, Mellits DE, Bertsch LA, Boisvert DP, Hundley MB, Johnson RK, Strom JA, Transou CR. Cerebral arterial spasm--a controlled trial of nimodipine in patients with subarachnoid hemorrhage. *N Engl J Med*. 1983 Mar 17;308(11):619-24. [PubMed](#)

Bederson JB, Connolly ES Jr, Batjer HH, Dacey RG, Dion JE, Diringer MN, Duldner JE Jr, Harbaugh RE, Patel AB, Rosenwasser RH, American Heart Association. Guidelines for the management of aneurysmal subarachnoid hemorrhage: a statement for healthcare professionals from a special writing group of the Stroke Council, American Heart Association. *Stroke*. 2009 Mar;40(3):994-1025. [509 references] [PubMed](#)

Clinical trial of nimodipine in acute ischemic stroke. The American Nimodipine Study Group. *Stroke*. 1992 Jan;23(1):3-8. [PubMed](#)

Connolly ES, Rabinstein AA, Carhuapoma JR, Derdeyn CP, Dion J, Higashida RT, Hoh BL, Kirkness CJ, Naidech AM, Ogilvy CS, Patel AB, Thompson BG, Vespa P, American Heart Association Stroke Council, Council on Cardiovascular Radiology and Intervention, Council on Cardiovascular Nursing, Council on Cardiovascular Surgery and Anesthesia, Council on Clinical Cardiology. Guidelines for the management of aneurysmal subarachnoid hemorrhage: a guideline for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke*. 2012 Jun;43(6):1711-37. [PubMed](#)

Fogelholm R, Palomäki H, Erilä T, Rissanen A, Kaste M. Blood pressure, nimodipine, and outcome of ischemic stroke. *Acta Neurol Scand*. 2004 Mar;109(3):200-4. [PubMed](#)

Haley EC, Kassell NF, Torner JC, Truskowski LL, Germanson TP. A randomized trial of two doses of nicardipine in aneurysmal subarachnoid hemorrhage. A report of the Cooperative Aneurysm Study. *J Neurosurg*. 1994 May;80(5):788-96. [PubMed](#)

Kaste M, Fogelholm R, Erilä T, Palomäki H, Murros K, Rissanen A, Sarna S. A randomized, double-blind, placebo-controlled trial of nimodipine in acute ischemic hemispheric stroke. *Stroke*. 1994 Jul;25(7):1348-53. [PubMed](#)

Leifer D, Bravata DM, Connors JJ, Hinchey JA, Jauch EC, Johnston SC, Latchaw R, Likosky W, Ogilvy C, Qureshi AI, Summers D, Sung GY, Williams LS, Zorowitz R, American Heart Association Special Writing Group of the Stroke Council, Atherosclerotic Peripheral Vascular Disease Working Group, Council on Cardiovascular Surgery and Anesthesia, Council on Cardiovascular Nursing. Metrics for measuring quality of care in comprehensive stroke centers: detailed follow-up to Brain Attack Coalition

comprehensive stroke center recommendations: a statement for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke*. 2011 Mar;42(3):849-77. [PubMed](#)

Mayberg MR, Batjer HH, Dacey R, Diringer M, Haley EC, Heros RC, Sternau LL, Torner J, Adams HP Jr, Feinberg W, et al. Guidelines for the management of aneurysmal subarachnoid hemorrhage. A statement for healthcare professionals from a special writing group of the Stroke Council, American Heart Association. *Stroke*. 1994 Nov;25(11):2315-28. [PubMed](#)

The Joint Commission. Disease-specific care certification program. Comprehensive stroke: performance measurement implementation guide. Oakbrook Terrace (IL): The Joint Commission; 2015 Mar. 278 p.

Wahlgren NG, MacMahon DG, DeKeyser J, Indredavik B, Ryman T. Intravenous Nimodipine West European Stroke Trial (INWEST) of nimodipine in the treatment of acute ischemic stroke. *Cerebrovasc Dis*. 1994;4:204-10.

Primary Health Components

Stroke; subarachnoid hemorrhage (SAH); nimodipine treatment

Denominator Description

Subarachnoid hemorrhage (SAH) patients (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

Subarachnoid hemorrhage (SAH) patients for whom nimodipine treatment was administered within 24 hours of arrival at the hospital

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Unspecified

Extent of Measure Testing

Unspecified

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Hospital Inpatient

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Specified

Target Population Age

Age greater than or equal to 18 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Making Care Safer

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Getting Better

IOM Domain

Effectiveness

Safety

Timeliness

Data Collection for the Measure

Case Finding Period

Unspecified

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Clinical Condition

Institutionalization

Patient/Individual (Consumer) Characteristic

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions

Discharges with International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Principal Diagnosis Code for subarachnoid hemorrhage as defined in the appendices of the original measure documentation

Exclusions

Patients less than 18 years of age

Patients who have a Length of Stay greater than 120 days

Patients with *Comfort Measures Only* (as defined in the Data Elements) documented on the day of or day after hospital arrival

Patients enrolled in clinical trials

Patients discharged within 24 hours of arrival at the hospital

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

Subarachnoid hemorrhage (SAH) patients for whom nimodipine treatment was administered within 24 hours of arrival at this hospital

Exclusions

None

Numerator Search Strategy

Institutionalization

Data Source

Administrative clinical data

Paper medical record

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

- Comprehensive Stroke (CSTK) Initial Patient Population Algorithm Flowchart
- CSTK-06: Nimodipine Treatment Administered Flowchart

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

CSTK-06: nimodipine treatment administered.

Measure Collection Name

Advanced Certification in Disease-specific Care Measures

Measure Set Name

Comprehensive Stroke Standardized Performance Measures

Submitter

The Joint Commission - Health Care Accreditation Organization

Developer

The Joint Commission - Health Care Accreditation Organization

Funding Source(s)

All external funding for measure development has been received and used in full compliance with The Joint Commission's corporate sponsorship policies, which are available upon written request to The Joint Commission.

Composition of the Group that Developed the Measure

Unspecified

Financial Disclosures/Other Potential Conflicts of Interest

Expert panel members have made full disclosure of relevant financial and conflict of interest information in accordance with The Joint Commission's conflict of interest policies, copies of which are available upon written request The Joint Commission.

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2015 Mar

Measure Maintenance

This measure is reviewed and updated by the developing organization every 6 months.

Date of Next Anticipated Revision

2015 Jul

Measure Status

This is the current release of the measure.

The measure developer reaffirmed the currency of this measure in April 2016.

Measure Availability

Source available from [The Joint Commission Web site](#) .

For more information, contact The Joint Commission at One Renaissance Blvd., Oakbrook Terrace, IL 60181; Phone: 630-792-5800; Fax: 630-792-5005; Web site: www.jointcommission.org

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NQMC Status

This NQMC summary was completed by ECRI Institute on May 19, 2015. The information was verified by the measure developer on June 22, 2015.

The information was reaffirmed by the measure developer on April 6, 2016.

Copyright Statement

This NQMC summary is based on the original measure, which is subject to the measure developer's copyright restrictions.

Production

Source(s)

The Joint Commission. Disease-specific care certification program. Comprehensive stroke: performance measurement implementation guide. Oakbrook Terrace (IL): The Joint Commission; 2015 Mar. 278 p.

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